

Exhibit C

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF SOUTH CAROLINA
GREENVILLE DIVISION**

ETHOX CHEMICALS, LLC and
JAMES TANNER,

Plaintiffs/Counterclaim Defendants,

v.

THE COCA-COLA COMPANY,

Defendant/Counterclaim Plaintiff.

Civil Action No. 6:12-cv-01682-TMC

SUPPLEMENTAL REBUTTAL EXPERT REPORT OF JOHN DOLL

DATED: JULY 21, 2015


JOHN DOLL

I. PRELIMINARY STATEMENT

1. I served a rebuttal expert report in this case on November 25, 2013 (“Original Report”). Since that time, additional facts have occurred in connection with the prosecution of certain Ethox Chemicals, LLC (“Ethox”) / James Tanner (“Tanner”) patent applications before the United States Patent and Trademark Office (“PTO”) that further support my opinions that: (1) the PTO did not allow The Coca-Cola Company’s (“TCCC”) U.S. Patent No. 8,110,265 (“the ‘265 patent”) based on Tanner’s alleged contribution, (2) Tanner does not qualify as a co-inventor of the ‘265 patent, and (3) TCCC did not prevent Ethox/Tanner from obtaining a patent for a method of making PEM.¹ In addition, it is my opinion that even if TCCC’s U.S. Patent Application Publication 2010/0143546 did not disclose the structure of PEM, the PTO still would have found that this publication rendered obvious Ethox/Tanner’s currently pending claims in U.S. Patent Application No. 13/067,571 directed to a polyester with 3 to 5% weight PEM and a container comprising a polyester with 3 to 5% weight PEM.

II. PROSECUTION HISTORY SINCE NOVEMBER 25, 2013

2. Set forth below is a summary of the relevant portions of the prosecution history for Ethox/Tanner’s U.S. Patent Application Nos. 13/067,571 and 14/040,562 and TCCC’s U.S. Patent Application No. 14/228,932 that have occurred since serving my Original Report.

A. Ethox/Tanner’s U.S. Patent Application No. 13/067,571

3. As noted in Paragraph 71 of my Original Report, Ethox and Tanner filed U.S. Patent Application No. 13/067,571 (“the ‘571 Application”) in June 2011. That application included claims directed to: (1) PEM, (2) a polymer composition comprising a polyester and a generic gas barrier additive formula encompassing PEM, (3) a polymer composition comprising

¹ As I noted in paragraph 25 of my Original Report, I reserved the right to supplement my report in the event of new information affecting my analysis.

a polyester and PEM, (4) a container comprising a polyester and a generic gas barrier additive formula encompassing PEM, and (4) a container comprising a polyester and PEM.

4. As noted in Paragraph 73 of my Original Report, in July 2013, Examiner Yoon issued an Office Action rejecting every claim of the Tanner Application.

5. Ethox subsequently responded to the rejection of its claims and notified the Examiner that it had sued TCCC in the United States District Court for the District of South Carolina and that “[t]he litigation relates to technology invented by Dr. Tanner, including technology set forth in, inter alia, Claim 11 of U.S. Patent No. 8,110,265 and co-pending U.S. Patent Application Serial No. 12/629,379.” *Office Action Reply* at 20 (Jan. 15, 2014)

6. In February 2014, the Examiner issued a second Office Action finally rejecting all claims and maintaining the rejection of claims directed to PEM as anticipated by U.S. Patent Application Publication No. 2009/0087764 (“Weiss”), which published on April 2, 2009. *Office Action* at 7-8 (Feb. 10, 2014).

7. The Examiner was unpersuaded by Ethox’s argument and contention that Weiss could not serve as invalidating prior art because it only teaches the structure of PEM and not how to synthesize PEM. In particular, the Examiner noted that for “a compound having [a] very complex structure not known to one skilled in the art at the time of the invention” a reference “may” need to teach a method for synthesizing that compound in order to constitute invalidating prior art. *Id.* at 5.

8. But the Examiner highlighted that Weiss did not need to disclose a synthetic pathway for PEM in order to constitute invalidating prior art because PEM was a well-known compound as evidenced by Espendschied’s 1987 disclosure of the compound. *Id.* Moreover, the Examiner further highlighted that PEM is not formed by a complicated reaction involving more

than two reactants or through a multi-step synthesis. *Id.* Instead, the Examiner noted that PEM can be synthesized from two well-known reactants, namely a diacid and monoalcohol. *Id.*²

9. The Examiner also maintained the rejection of claims directed to PEM as anticipated by JP 08-302302, which published on November 19, 1996; and U.S. Patent No. 4,705,844 (“Espendschied”), which issued on November 10, 1987. *Id.* at 8-9. The claims directed to the combination of a polyester and PEM were also rejected as anticipated by Espendschied. *Id.* at 9.

10. The Examiner was also unpersuaded by Ethox’s argument and assertion that Espendschied did not anticipate these claims because of Espendschied’s failure to explicitly disclose that PEM increases the gas barrier properties of polyesters. *Id.* The Examiner maintained the rejection of the claims based on Espendschied’s teaching of a composition comprising a polyester, such as polyethylene terephthalate (“PET”), and PEM and noted that “[t]he asserted gas barrier enhancing additive properties are [an] inherent property of the PET composition of Espendschied” *Id.*³

11. The Examiner also rejected the claims directed to PEM; the combination of a polyester and PEM; and a container comprising a polyester and PEM as obvious in light of the combination of Espendschied and Wu. *Id.* at 9-10.

² This comports with my opinion set forth in Paragraph 81 of my Original Report that the named inventors of TCCC’s ‘265 patent did not have to disclose an operative method of making PEM in order to be entitled to patent claims encompassing PEM because PEM is a known chemical compound.

³ The discovery of a previously unappreciated property of a prior art composition, or of a scientific explanation for the prior art’s functioning, does not render the old composition patentably new to the discoverer. Thus, the claiming of a new use, new function or unknown property, which is inherently present in the prior art, does not necessarily make the claim patentable. There is no requirement that a person of ordinary skill in the art would have recognized the inherent disclosure *at the time of invention*, but only that the subject matter is in fact inherent in the prior art reference. MPEP § 2112.

12. The Examiner noted that Wu teaches the use of nucleating agents that accelerate the crystallization process for use in copolyester bottles and that Espendschied teaches PEM as a crystallization accelerator, i.e. nucleating agent, for incorporation into polyesters. *Id.* at 10. The Examiner concluded that it would have been obvious to use Espendschied's nucleating agent, PEM, which is a known crystallization accelerator for polyesters, in making the copolyester bottles of Wu. *Id.*

13. The Examiner noted that "[s]election of a known material based on its suitability for its intended use if prima facie obvious" and "[t]he combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results." *Id.*

14. The Examiner also rejected the claims directed to PEM; the combination of a polyester and PEM; and a container comprising a polyester and PEM as obvious in light of the combination of Tseng in view of JP 08-302302. *Id.* at 10-11.

15. The Examiner noted that Tseng teaches polyester bottles and the incorporation of plasticizers into polyesters while JP 08-302302 teaches PEM as a plasticizer and incorporation of PEM into polymers, such as film. *Id.*

16. The Examiner noted that it would have been obvious to use PEM, which JP 08-302302 discloses as a known plasticizer, in making the polyester bottles of Tseng since Tseng teaches the use of plasticizers in connection with polyester bottles. *Id.*

17. The Examiner disagreed with Ethox's assertion that combining JP 08-302302 with Tseng would be improper because JP 08-302302 does not teach PET. *Id.* The Examiner highlighted that claim 3 of JP 08-302302 recites a thermoplastic resin and that polyesters, including PET, are thermoplastic resins. *Id.*

18. In addition, the Examiner rejected the claims directed to PEM; the combination of a polyester and PEM; and a container comprising a polyester and PEM as anticipated by TCCC's U.S. Patent Application Publication No. 2010/0143546, which is the publication for TCCC's U.S. Application No. 12/629,379 referenced in my original report. *Id.* at 6.

19. In August 2014, Ethox deleted claims directed solely to PEM. *Office Action Reply* at 2 (Aug. 11, 2014). In addition, Ethox amended its claims directed to (1) a polymer composition comprising a polyester and PEM, and (2) a container comprising a polyester composition, including PEM. In particular, Ethox added a limitation to these claims requiring that 3-5% of the total composition comprise PEM. *Id.* at 2-5.⁴

20. Ethox again alerted the Examiner that it had sued TCCC in the United States District Court for the District of South Carolina. *Id.* at 16.

⁴ TCCC taught a polyester composition containing this percentage weight range of gas barrier additive well before Tanner's involvement with TCCC in 2009. TCCC's March 2005 U.S. Patent Application No. 11/095,053 teaches a container made of a polyester composition that is 0.1% to 5% weight gas barrier additive. *U.S. Patent Application Publication No. 2005/0221036* at [0030]. TCCC's U.S. Provisional Application No. 61/121,036 ("036 Application") similarly discloses a polyester composition with a gas barrier enhancing additive "desirably in the range of about 0.1 to about 10 weight percent of the polyester composition, more desirably in the range of about 1 to about 6 weight percent of the polyester composition, and still more desirably in the range of about 2 to about 4 percent of the polyester composition." *036 Application* at [0027]. In addition, that application discloses a container made of a polyester composition that is 3 and 4% percent weight gas barrier additive, respectively. *Id.* at [00110] – [00114], [00118] – [00021], [00123], [0001].

21. In addition, Ethox argued that the Examiner should withdraw the rejection of Ethox's claims as anticipated/obvious over TCCC's U.S. Patent Application Publication No. 2010/0143546 because Tanner invented PEM not TCCC. *Id.* at 19. In particular, Ethox stated:

Applicant is the inventor of PEM and related compounds. As set forth in the Complaint filed by Ethox Chemicals LLC and Dr. James Tanner, i.e., Applicant, Dr. Tanner conceived of PEM and on August 26, 2009, sent an email with the PEM structure to T. Edwin Freeman of the Coca-Cola Company.

Id.

22. In August 2014, Ethox/Tanner also filed a Request for Continued Examination (RCE).

23. On September 15, 2014, Ethox/Tanner's prosecuting attorney, Mr. Angres, initiated a personal interview with the Examiner.

24. On September 17, 2014, the Examiner issued an Office Action and provided the following summary of the September 15, 2014 interview:

Mr. Angres [] asserted that amended claims reciting 3-5% of the diester would be patentable and the art of record (Kriegel) would not be a valid prior art as evidence by ongoing litigation against Coca-Cola, but the examiner replied that he cannot comment on the ongoing litigation and applicant's assertion based on pending litigation has little probative value at this time. The examiner also pointed out that the art of record (US 4,705,844) would make the amended claims obvious which is further explained in the non-final rejection.

Id. at Applicant-Initiated Interview Summary.

25. The Examiner also rejected all the claims in the RCE, including claims directed to (1) a polymer composition comprising a polyester and 3-5% weight PEM, and (2) a container comprising a polyester composition, including 3-5% weight PEM. *See Office Action* (Sept. 17, 2014).

26. The Examiner maintained the rejection of these claims based on TCCC's U.S. Patent Application Publication No. 2010/0143546 and highlighted that:

Applicant assert[s] that the litigation [] involves the inventorship of PEM, but such assertion lacks probative value since[] the instant diester (PEM) is known since at least 1987 as taught by Espendschied et al (US 4,705,844) as well as by [0025] of JP 08-302302 A (06/1996) stated in the Final rejection. Furthermore, applicant ha[s] cancelled all claims related to the compounds including the PEM per se (diester) which would be at least partial evidence that applicant does not have the asserted inventorship of PEM.

Id. at 4 (emphasis added).

27. The Examiner also maintained the obviousness rejection of claims directed to the combination of a polyester and PEM in view of Espendschied for the reasons set forth in the prior office actions. *Id.* at 4-6.

28. In addition, the Examiner dismissed Ethox's assertion that because Espendschied teaches using a polyester composition with 6% weight PEM it teaches away from using a polyester with 3 to 5% weight PEM. *Id.* at 5.

29. The Examiner noted that Espendschied teaches the use of a polyester composition including a crystallization accelerator, such as PEM, in an amount sufficient to reduce the post-crystallization temperature by at least 4°C. *Id.* Examples 9 and 10 of Espendschied teach the use of a polyester composition including 6% weight PEM, which reduced the post-crystallization temperature by 13°C and 12°C, respectively. *Id.* The Examiner noted that a polyester composition including 5% weight PEM would decrease the post-crystallization temperature of the polyester composition by at least 4°C since the polyester with 6% weight PEM reduced the temperature by as much as 13°C. *Id.* at 5-6.

30. In April 2015, the Examiner issued an Office Action finally rejecting the remaining claims as set forth in the September 17, 2014 Office Action. *Office Action* at 1 (April

9, 2015). The Examiner again noted that Ethox's assertion that its case against TCCC involves the inventorship of PEM lacks probative value because PEM has been known since at least 1987 and Ethox had cancelled all claims directed to PEM. *Id.* at 2. In addition, the Examiner noted that Ethox deleted claims to PEM in its U.S. Continuation Application No. 14/040,562. *Id.*

31. The Examiner set a three month reply period. *Id.* at 1. As of the service of this supplemental report, Ethox has not responded.

B. Ethox/Tanner's U.S. Patent Application No. 14/040,562

32. In September 2013, Ethox/Tanner filed U.S. Patent Application No. 14/040,562 – a continuation application of the '571 Application. Ethox/Tanner also filed preliminary amendments in September 2013 and April 2014 such that application includes claims directed to a process for making PEM by reacting dimethyl terephthalate with an aryloxyalkanol and claims directed to PEM made by a process of reacting dimethyl terephthalate with an aryloxyalkanol.

33. In January 2015, Examiner Luderer rejected all claims. The Examiner rejected as anticipated claims directed to PEM made by a process of reacting dimethyl terephthalate with an aryloxyalkanol based on U.S. Patent No. 3,557,167 to Hülsmann issued on January 19, 1971, which discloses the structure of PEM. *Office Action* at 8 (January 15, 2015).

34. The Examiner noted that these claims were product-by-process claims, and "[t]he patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *Id.* at 8.

35. The Examiner also found that Mirous (WO2012/134643) anticipated claims to a process for making PEM by reacting dimethyl terephthalate with an aryloxyalkanol. *Id.* at 8-9. WO2012/134643 is the Patent Cooperation Treaty Application related to U.S. Patent Nos. 8,344,172 and 8,692,013 – patents issued to Tabor et al and assigned to Stepan Company for the

process of making PEM that the company developed in conjunction with its gas barrier additive work for TCCC.

36. On July 15, 2015, Ethox/Tanner filed a response, deleting the claims specifically directed to a process for making PEM by reacting dimethyl terephthalate with an aryloxyalkanol and to PEM made by a process of reacting dimethyl terephthalate with an aryloxyalkanol. *Resp. to Non-Final Action Dated January 15, 2015* at 4-5.

C. TCCC's U.S. Patent Application No. 14/228,932

37. As noted in my Original Report, on December 2, 2009, TCCC filed U.S. Patent Application Nos. 12/629,379 ("the '379 Application"), with claims generally directed to a container comprising a polyester and a Formula I or II gas barrier additive, and 12/629,657 ("the '657 Application"), with claims generally directed a container comprising a polyester, a Formula I or II gas barrier additive, and a creep control agent.

38. The '657 Application subsequently issued as U.S. Patent No. 8,110,265 – the patent at issue in this case.

39. On March 28, 2014, TCCC filed U.S. Patent Application No. 14/228,932 ("the '932 Application") as a continuation application of the '379 Application prior to TCCC's abandonment of the '379 Application on July 3, 2014.

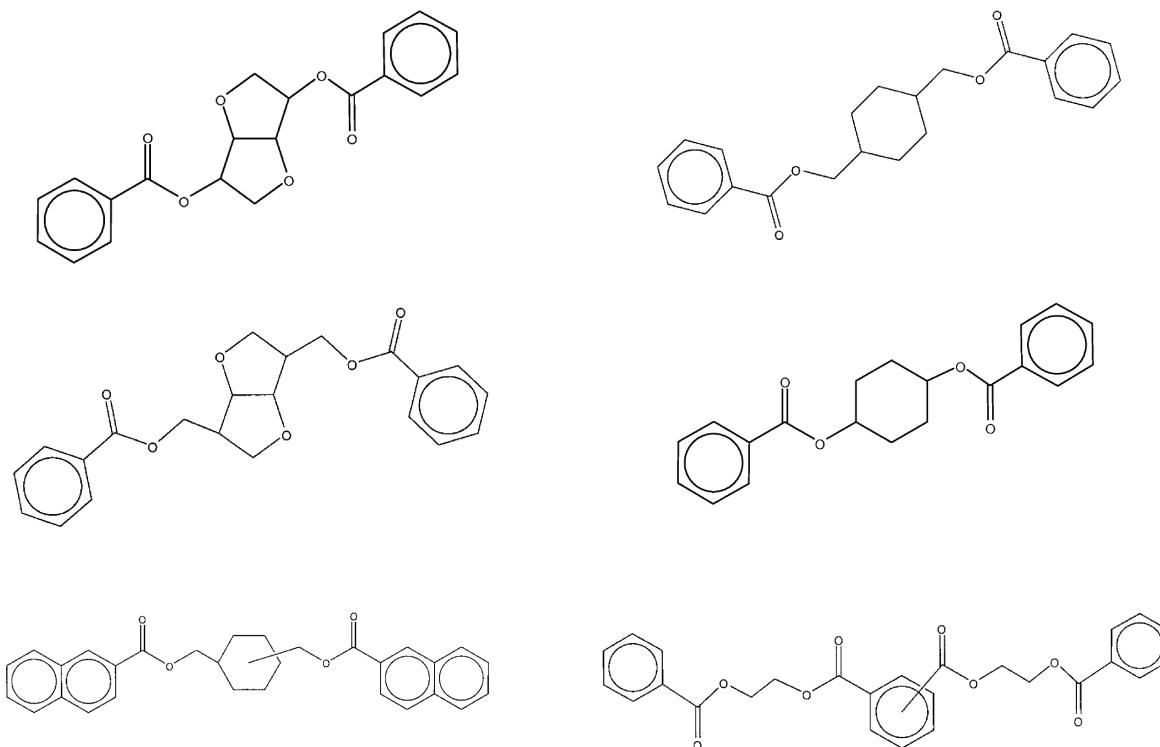
40. The '932 Application included claims generally directed to a container having a barrier improvement factor of at least about 1.05 and comprising a polyester composition having an intrinsic viscosity from about 0.65 to about 1.0 dL/g wherein the polyester composition comprises a polyester and a Formula I or II gas barrier additive similar to the Formula I and II gas barrier additives of the '265 patent.

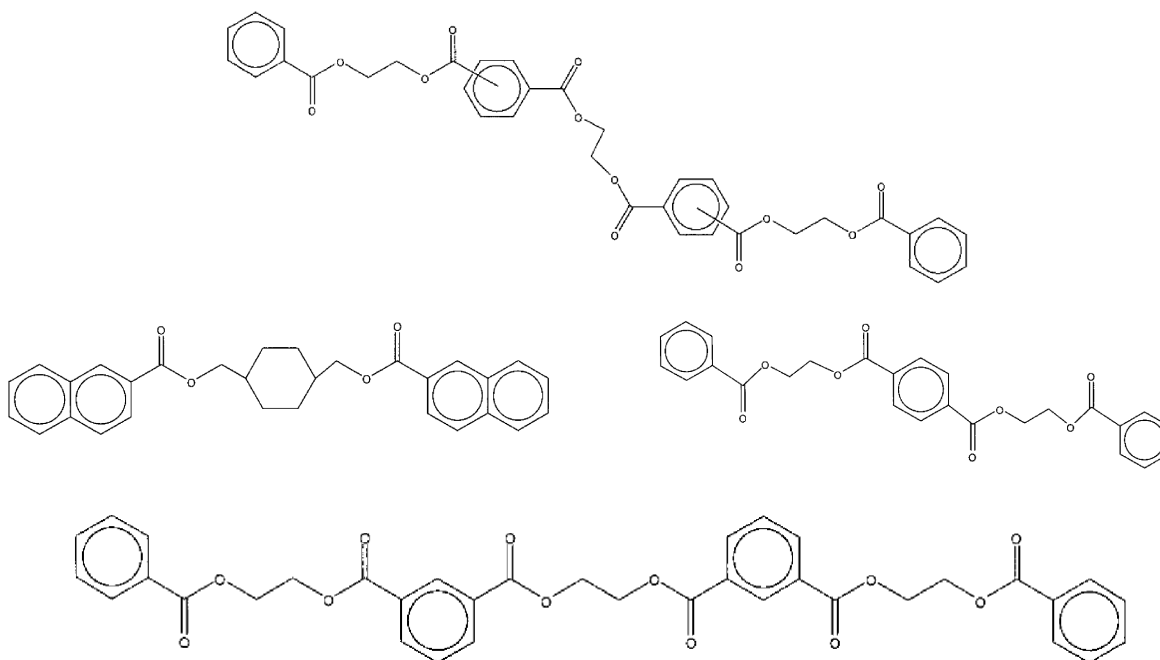
41. Examiner Pepitone rejected the broadest form of the claims in light of TCCC's U.S. Patent Application Publication No. 2006/0275568 ("the '568 publication"). *Office Action* at 2-4 (July 7, 2014).

42. The '568 publication is a continuation-in-part of TCCC's U.S. Patent Application No. 11/146,918, which I discussed in my initial report.

43. The Examiner noted that the '568 publication teaches a polyester container prepared from a polyester containing 0.01 to 10 wt% of a gas barrier additive where the gas barrier additive has "the formula R1OOC-AR-COOR2, with AR as phenylene or naphthylene, and R1 and R2 as C1 to C6 alkyl groups (ex. cyclohexyl), a phenyl group, or naphthyl group." *Id.* at 2-3 (July 7, 2014).

44. TCCC narrowed the generic Formula I and II gas barrier additive limitation of the claims to ten specific structures, including BPO-1:





Office Action Reply at 3-14 (Jan. 6, 2015).

45. The Office allowed these claims. In particular, Examiner Pepitone found that TCCC's '568 publication did not disclose or render obvious claims directed to a container comprising a polyester and one of these ten specific structures. *Notice of Allowance* at 2 (Feb. 5, 2015) ("Shi *et al.* (['] '568 [publication]) does not disclose or render obvious the claimed gas barrier additives.")

46. The '932 application issued as U.S. Patent No. 9,051,116 on June 9, 2015.

III. THE FILE HISTORIES FOR ETHOX/TANNER'S '571 AND '562 APPLICATIONS FURTHER CONFIRM THAT PEM OR PEM SHELF-LIFE AND BIF TESTING WERE NOT THE REASONS FOR ALLOWING THE '265 PATENT

47. I opined in my Original Report that the file history for the '265 patent clearly shows that the Examiner did not rely on the disclosure of the specific chemical structure of PEM or the PEM shelf-life and barrier improvement factor ("BIF") testing as reasons for allowing the application. *Original Report* at ¶ 56. Instead, the Examiner allowed the claims because Shi does

not disclose a container comprising the combination of a creep control agent and gas barrier enhance additive. *Id.*

48. The prosecution history for Ethox/Tanner's '571 and '562 Applications further support my opinion that the Examiner did not rely on the disclosure of the specific chemical structure of PEM or the PEM shelf-life and BIF testing as reasons for allowing the '265 patent. That the Examiners for the '571 and '562 Applications have identified prior art references that teach PEM and/or its use in polyesters further supports my opinion that the specific chemical structure of PEM or the PEM shelf-life and BIF testing were not the basis for allowing the '265 patent.

IV. THE FILE HISTORIES FOR ETHOX/TANNER'S '571 AND '562 APPLICATIONS FURTHER CONFIRM THAT TANNER'S ALLEGED CONTRIBUTION TO THE '265 PATENT WAS KNOWN AND/OR OBVIOUS OVER THE PRIOR ART

49. I opined in my Original Report that Tanner's alleged contribution to the invention of the '265 patent did not constitute a significant contribution that would warrant naming him as a co-inventor of that patent for several reasons, including that his alleged contribution was known and/or obvious over the prior art. *Original Report* at § III(B).

50. Since service of my Original Report, Ethox/Tanner have repeatedly highlighted to the Examiner that they have sued TCCC for inventorship over PEM in the District of South Carolina. But the Examiner has been wholly unpersuaded by Ethox's argument. The Examiner has completely called into question the legitimacy of Ethox/Tanner's present lawsuit, indicating that the lawsuit cannot involve a dispute about inventorship of PEM because that concept is known in the art.

51. The PTO has held that all the concepts that Tanner allegedly conceived are known and/or obvious over the prior art. In particular, the PTO has found that Weiss, JP 08-302302,

Espendschied, and Hülsmann anticipate claims to PEM and PEM as a gas barrier additive. The PTO has also held that Espendschied anticipates claims to the combination of PEM as a gas barrier additive and a polyester. In addition, the PTO has held that the combination of Espendschied and Wu and the combination of Tseng and JP-08-302302 render obvious claims to a container comprising PEM as a gas barrier additive and a polyester.

52. This further confirms that Tanner's alleged contribution to the invention of the '265 patent was known and/or obvious over the prior art, and as such, he is not a co-inventor of the '265 patent.

V. THE FILE HISTORY FOR ETHOX/TANNER'S '562 APPLICATION FURTHER CONFIRMS THAT TCCC DID NOT PREVENT ETHOX/TANNER FROM OBTAINING A METHOD OF MAKING PEM

53. I opined in my Original Report that TCCC's disclosure of PEM did not serve to preclude Tanner from obtaining a patent on methods of making PEM so long as the methods that Tanner seeks to patent otherwise meet the requirements of patentability. *Original Report* at ¶¶ 111-114.

54. In September 2013, Ethox/Tanner filed the '562 Application with claims generally directed to a method of making PEM, i.e. bis(2-phenoxyethyl) terephthalate, by reacting an acid, i.e. dimethyl terephthalate, with an alcohol, i.e. aryloxyalkanol.⁵

55. The Examiner rejected as anticipated claims directed to PEM made by a process of reacting dimethyl terephthalate with an aryloxyalkanol based on U.S. Patent No. 3,557,167 to Hülsmann issued on January 19, 1971, which discloses the structure of PEM. *Office Action* at 8 (January 15, 2015).

56. The Examiner also found that Mirous (WO2012/134643) anticipated claims to a process for making PEM by reacting dimethyl terephthalate with an aryloxyalkanol. *Id.* at 8-9.

⁵ This application was not publically available until after service of my Original Report.

WO2012/134643 is a Patent Cooperation Treaty Application related to U.S. Patent Nos. 8,344,172 and 8,692,013 – patents issued to Tabor et al and assigned to Stepan Company for the process of making PEM that the company developed in conjunction with its gas barrier additive work for TCCC.

57. This further supports my opinion that TCCC's disclosure of PEM did not serve to preclude Ethox/Tanner from obtaining a patent on methods of making PEM.

VI. EVEN IF TCCC'S U.S. PATENT APPLICATION PUBLICATION NO. 2010/0143546 DID NOT INCLUDE THE SPECIFIC STRUCTURE OF PEM, THAT APPLICATION STILL WOULD HAVE RENDERED THE CURRENT CLAIMS OF ETHOX/TANNERS '571 APPLICATION OBVIOUS

58. In my Original Report, I also opined that Ethox/Tanner never would have been able to obtain patent claims on a polyester container comprising PEM because these claims would have been rendered obvious in view of the disclosures in TCCC's '034 Provisional Application. *Original Report* at Section IV(A).

59. As I noted in detail in my Original Report, the teachings of the '034 Application as a whole, including the disclosure of BPO-1 as a preferred Formula II gas barrier additive, establish that PEM is an obvious selection from the Formula II genus of gas barrier enhancing additives. *Id.*

60. The Examiner has currently rejected Ethox's claims to a polyester with 3 to 5% weight PEM and a container comprising a polyester with 3 to 5% weight PEM as anticipated by TCCC's U.S. Patent Application Publication No. 2010/0143546 based on that application's disclosure of the structure of PEM and that weight range of gas barrier additive.

61. Nevertheless, it is my opinion that if this publication did not disclose the structure of PEM, the Examiner would still have rejected these claims as obvious over TCCC's U.S. Patent Application Publication No. 2010/0143546. For all the reasons set forth in Section IV(A)

of my Original Report and because this Application teaches a polyester composition and container with that percentage weight of gas barrier additive, this application renders these claims obvious even without the disclosure of the structure of PEM.

Materials Considered

U.S. Patent No. 3,557,167

U.S. Patent No. 4,705,844

U.S. Patent No. 8,110,265

U.S. Patent No. 8,344,172

U.S. Patent No. 8,692,013

U.S. Patent No. 9,051,116

File History for U.S. Patent Application Serial No. 13/067,571

File History for U.S. Patent Application Serial No. 14/040,562

File History for U.S. Patent Application Serial No. 14/228,932

U.S. Patent Application Serial No. 11/095,053

U.S. Patent Application Serial No. 11/146,918

U.S. Patent Application Serial No. 12/629,379

U.S. Patent Application Serial No. 12/629,657

U.S. Patent Application Publication No. 2005/0221036

U.S. Patent Application Publication No. 2006/0275568

U.S. Patent Application Publication No. 2009/0087764

U.S. Patent Application Publication No. 2010/0143546

U.S. Provisional Application Serial No. 61/121,036

W.O. 2012/134543